

VARUN AJITH

+91 8593008087 ◊ Alappuzha, Kerala, India

varunajithvarun@gmail.com ◊ [Varun Ajith LinkedIn](#) ◊ [Varun Ajith GitHub](#)

OBJECTIVE

Recent Robotics and Automation Engineering graduate with hands-on experience in ROS, autonomous systems, and sensor integration. Skilled in both hardware and software aspects of robotics, eager to contribute to the development of innovative mobility platforms. Looking for a Robotics Systems Engineer role to apply my technical expertise and problem-solving skills in a dynamic and challenging environment.

EDUCATION

BTech in Robotics and Automation, Saintgits College of Engineering, Kottayam 2019 - 2023
CGPA: 7.7

Higher Secondary Education, GHSS Ramapuram 2015 - 2017
Percentage: 85%

Secondary Education, Bishop Moore Vidyapith, Kayamkulam 2010 - 2015
Percentage: 80%

SKILLS

Programming	C++, Python, ROS2, Ladder Logic, ROS
Hardware	Raspberry Pi, ESP32, PLC, Servo Motors, IMU Sensors
Technologies	Ubuntu, LiDAR, GPS, Computer Vision, Sensor Fusion, communication protocols
Tools	Gazebo Simulation, OpenCV, Arduino IDE
Professional skills	Technical Documentation, Critical Thinking, Resilience

EXPERIENCE

Intern Oct 2024
Indian Institute of Science (IISc), Bangalore

- Assisted in developing a drone system designed for naval supply missions with extended range and autonomous capabilities.
- Calibrated servo motors for the Shipborne Drone Landing System, ensuring stable horizontal alignment of the landing pad under wave disturbances.
- Simulated drone dynamics and control algorithms in Gazebo, contributing to the refinement of flight performance and stability.
- Gained in-depth knowledge of control theories and their mathematical and physical principles while collaborating with research teams.

PROJECTS

- **Search and Rescue Robot:**
 - Designed a six-legged robot with 18 HS-995MG servo motors, improving terrain adaptability by 7%.
 - Integrated RPLiDAR A1, Neo-6M GPS, and MPU6886 IMU, increasing navigation accuracy by 5%.
 - Implemented ROS2 on a Raspberry Pi 4 with C++ and Python, enhancing system efficiency by 15%.
 - Applied OpenCV and machine learning for victim detection.
 - Developed fail-safe mechanisms, cutting mission failure rates by 18%.

- **Gesture-Controlled Robot Car:**

- Developed an RC toy car controlled via hand gestures captured by an MPU6050 IMU sensor, improving control responsiveness by 5%.
- Implemented wireless communication between two ESP32 microcontrollers, reducing signal latency by 15%.
- Controlled four DC motors using an L298N motor driver for precise directional movement.
- Achieved intuitive movement based on hand orientation, enhancing ease of use.
- Reduced overall hardware cost by 4% by optimizing component selection.

- **Automated Metal Segregator:**

- Engineered a conveyor-based metal sorting system using Allen-Bradley PLC and sensors.
- Improved sorting accuracy by 12% through optimized sensor placement and timing.
- Reduced system downtime by 10% with efficient Ladder Logic programming.
- Increased throughput by 1% through enhanced ejector response time.
- Achieved 100% object counting precision with proximity sensor calibration.

- **Auto Mains Fail (AMF):**

- Designed an industrial automation system with seamless power source switching.
- Reduced power switchover time to less than 1 second using Allen-Bradley PLC.
- Enhanced system reliability by 15% with optimized Ladder Logic.
- Minimized component failure rates by 4% with effective relay implementation.
- Increased operational efficiency by 12% through streamlined control processes.

CERTIFICATION

Completed a **PG Diploma in Industrial Automation** at SMEC Labs, Kochi, from August 2023 - December 2023. Acquired expertise in PLC programming, SCADA systems, and industrial robotics.

PUBLICATION

Published a paper titled '**Search and Rescue Robot**' in Volume 12, Issue 1, 2024 of the International Journal of Science, Engineering, and Technology (IJSET). The paper covers the development and deployment of an autonomous robot for emergency navigation.